

PROJECT NUMBER: 2108
PROJECT TITLE: New Product Technology
PROJECT LEADER: W. T. Callahan
PERIOD COVERED: October, 1988

I. PROJECT SAUNA

- A. **Objective:** Develop an acceptable product with a modified plastic fluted filter.
- B. **Status:** Cigarette models were prepared with reduced smoke back-flow while maintaining the ISO tar level at approximately the same as for Saudi Barclay. This was achieved by reducing the amount of front band dilution and electrostatically perforating the cigarette paper. These models had front band dilution levels of 30% (laser), 12% (ESP), and 0% the paper porosities of these models were 50, 77, 132, 154, and 170 Coresta. One model had a low pressure drop filter.

The models with 0% front band dilution give no smoke back flow while those with 12% dilution had less than for Saudi Barclay. Subjective screening by Flavor Development rated the 12% dilution models first. The preferred model had 132 Coresta cigarette paper. The deliveries of the preferred models and Barclay were as follows:

	<u>BARCLAY</u>		<u>SAUNA</u>
FRONT BAND DILUTION, %	12	12	~32
PAPER POROSITY, Coresta	132	50	~25
ISO TAR, mg	11.7	11.6	11.7
PUFF COUNT	6.9	6.8	8.2

- C. **Plans:** The preferred models will be remade using cork-on-white tipping (to facilitate ESP front band dilution), analytically tested, and submitted to EEMA for evaluation.

II. HUMIDOR PACK

- A. **Objective:** Develop a moisture release device for use in a cigarette pack which maintains the pack OV at a desired level.
- B. **Status:** Celanese (manufacturer of Celgard) has recommended a contract packager (Paco Pharmaceutical Services) who has experience producing packets with Celgard. A confidentiality agreement was signed and discussions were held with Paco. Paco indicated that they would have similar problems with the current packet design as were observed at Klockner Packaging (edge curling and leaking), so a modified packet was suggested. This packet will allow foil-to-foil sealing and will have a Celgard "window" on one side to allow water vapor transmission. This should eliminate curling.

A meeting was held with Physical Research to initiate a study to determine if the humidor solution can be reformulated. Packet formation, packet insertion into the cigarette pack, and seal quality could be improved by eliminating or reducing the requirement of excess salt in the solution.

Aging trials of cellulose triacetate film with the improved foil laminate backing were begun, however, leaking seals occurred after one day, thereby halting the study. Reynolds Metals has been requested to provide an acceptable EVA laminate backing which will not fail at high temperatures.

Installation of the modified GDX-2 packer in the OC basement has been delayed due to PM Engineering priorities.

- C. **Plans:** Initial trials of the Celgard window packet are scheduled for early to mid-December. This timing allows for a die to be fabricated to produce the Celgard window and components to be in place for producing machine-made packets. PM Engineering and R&D will visit Paco next week to finalize packet design and to discuss their solution dispensing capabilities.

III. KAYMICH MENTHOL APPLICATOR

- A. **Objective:** Evaluate a Kaymich menthol applicator as an alternative mentholation process.
- B. **Status:** A study to analytically and subjectively compare several Kaymich menthol prototypes with a menthol-on-foil control has been initiated. Kaymich prototypes at four menthol levels were made and submitted for testing. During this run, a modified 8-hole nozzle applicator was used which distributed the menthol over a larger area of paper to minimize bleed-through. Excess menthol buildup at the paper guide was observed and menthol losses at the maker were approximately the same as in previous trials (below):

	MOF	KAYMICH			
TARGET PACK MENTHOL, mg	76	86	82	78	74
ACTUAL PACK MENTHOL, mg	75.3	77.0	76.0	71.0	70.5
MENTHOL LOSS, %	-0.9	-10.5	-7.3	-9.0	-4.7

- C. **Plans:** Complete the analytical and subjective testing and make a recommendation regarding further evaluation of the Kaymich system.

IV. EMBOSSING TECHNOLOGY

- A. **Objective:** Explore embossing technology for potential new product development.
- B. **Status:** The second generation laboratory embossing unit has been delivered and is currently being debugged.
- C. **Plans:** Continue providing support to Engineering as needed and pursuing other applications for new product development.

V. MENTHOL ON FOIL

- A. Objective: Support the introduction of the menthol on foil process..
- B. Status: Mentholated foils were prepared for Domestic and International Product Development and Cigarette Technology studies during the month of October.

The third mentholator control problem has not been corrected yet by Engineering due to priorities.

- C. Plans: Produce samples as requested. Qualify the third mentholator for use in the Semiworks when operational.